

UNCLASSIFIED

OFFICE OF MANNED SPACE FLIGHT  
PROGRAM DIRECTIVE

M-D

MA

1400.026  
(Project)

DATE

February 11, 1966

~~CONFIDENTIAL~~

APOLLO PROGRAM DIRECTIVE NO. 16

TO : Distribution

FROM:

*Samuel C. Phillips*  
Major General Samuel C. Phillips  
Director, Apollo Program

CONCURRENCE:

*David M. Jones*  
Major General David M. Jones  
Acting Director, Saturn/Apollo  
Applications Program

DOWNGRADED UNCLASSIFIED

PER E. O. #11652

BY: HCK

DATE: 2/12/74

SUBJECT : Assignment of Responsibility for the Apollo Mapping and Survey System  
Payload MA 009-016-1A

ACTION : The procedures in this directive will be implemented by OMSF and the  
MSF centers effective on the date of issuance.

- REFERENCES :
- a) NASA Management Instruction 4-1-1
  - b) NASA Management Instruction NMI 7100.1
  - c) Security Guide Concerning Lunar Mapping and Survey Aspects of  
Apollo, April 14, 1964, AA (SECRET)
  - d) NASA Management Instruction NMI 1052.43 effective April 20, 1965,  
Subject: DOD-NASA Agreement - NASA Manned Lunar Mapping and Survey  
Program
  - e) MSF Experiments Board Minutes, Meeting 65-4, July 19, 1965
  - f) MSF-1 Form 1067

I. PURPOSE

Up to the present time OMSF has provided technical management for the Mapping and Survey System (M&SS) definition studies conducted by the USAF and funding has been made directly to the Air Force by NASA Headquarters.

The purpose of this directive is to assign responsibility for the implementation of the Apollo Mapping and Survey System to the Manned Spacecraft Center. This responsibility includes: (1) acquisition of M&SS payloads from USAF, (2) defining and conducting the test program, and (3) mission operations.

The related spacecraft integration development with NAA (S&ID) has been managed and will continue to be the responsibility of MSC.

material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Sections 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~UNCLASSIFIED~~

GROUP 4  
DOWNGRADED AT 3-YEAR INTERVALS;  
DECLASSIFIED AFTER 12 YEARS

~~CONFIDENTIAL~~

UNCLASSIFIED

The development of the camera payload command and control system that utilizes the Apollo Guidance Computer (AGC) and the associated "X-box", the interface between the AGC and the camera payload, will also continue to be the responsibility of MSC.

These activities will be carried out pursuant to the NASA/DOD Agreement dated April 20, 1964 (see reference d. above).

## II. SCOPE

The M&SS will support Apollo program operations by providing lunar orbit photography for landing site survey, for identifying and locating landmarks to aid in navigation, and for lunar mapping and charting.

Five M&SS flight systems are required. The development of the M&SS payload and spacecraft interfaces will be compatible with two flights in 1968 on either AS-209 or AS-504 and on AS-507 and one mission each in 1969, 1970, and 1971. The first system must be delivered to the Kennedy Space Center in flight-ready condition by October 1, 1967.

The maximum flexibility and modularity possible is to be provided in the design of the system. For example, the design shall ensure that a decision to fly an M&SS can be made within six months of a launch date without causing a schedule change. Therefore, spacecraft interfaces will be kept to a minimum and all components possible must be contained in the assigned Sector I of the Apollo Service Module.

Although the M&SS payload will nominally be flown in the Service Module, the possibility of assigning it to other modules should be kept in mind during the design and the problems involved in such a procedure identified.

## III. ACTION REQUIRED

The Manned Spacecraft Center will prepare a Project Development Plan according to standard NASA requirements which will cover spacecraft and payload availability, the schedules (including proposed control milestones), quality and reliability procedures, mission planning, budget estimates, and progress reporting arrangements. The responsibilities described in the PDP shall be consistent with this directive. The PDP shall be submitted to the Apollo Program Director for his approval within sixty days of the issuance of this directive.

~~CONFIDENTIAL~~

UNCLASSIFIED

~~CONFIDENTIAL~~

UNCLASSIFIED

#### IV. RESPONSIBILITIES

Within OMSF the Apollo Program Director is responsible for administration and technical management of the M&SS program. Recognizing that the payload will also be flown on alternate Apollo and post-Apollo missions he will work closely with the Saturn/Apollo Applications Program Director. Security "need-to-know" will also be the responsibility of the Apollo Program Director.

MSC is responsible for procurement of flight hardware, integration into the Apollo spacecraft, mission planning, and mission operations including ground support.

The MSFEB approved the M&SS as experiment MSF-1 on July 19, 1965. The Experiment Coordinator is Mr. Myron W. Krueger, OMSF. He is responsible for the technical adequacy of the camera system configuration, and for obtaining photographic requirements from the Apollo Site Selection Board and from OSSA.

Data reduction and analysis will be performed employing the procedures in the M&SS Data Reduction Plan to be prepared and released by the Experiment Coordinator.

#### V. FUNDING

Funding transactions between NASA and USAF will be handled by OMSF directly with Hq. USAF based on requirements developed by MSC. Funding for the balance of the M&SS activities will be provided to MSC within established financial management channels and subject to appropriate programmatic controls.

UNCLASSIFIED

~~CONFIDENTIAL~~

UNCLASSIFIED

DISTRIBUTION:

MA/Phillips  
MA-1/Schaibley  
MA-4/Turnock  
MAO/Holcomb (4)  
MAP/Seccomb  
MAP-1/Kubat (3)  
MAP-2/Winn (2)  
MAP-2/Dunn  
MAP-4/Linn (3)  
MAP-5/Newman (2)  
MAR/Lenke (2)  
MAS/Thomson (4)  
MAT/Savage (4)  
M/Mueller  
M-1/Bowman  
MDM/Bogart  
MDP/Jones  
MD/Elms  
MB/Armstrong  
MC/Freitag  
MG/Day (6)  
ML/Disher (2)  
MLA/Krueger (6)  
MP/Lilly (2)  
MS/Cotton  
MF/Allen (6)  
MT/Gray (6)  
MO/Christensen (6)  
MM/Bollerud  
SM/Foster(6)

KSC/Debus  
KSC/Petrone

MSFC/von Braun  
MSFC/Mrazek  
MSFC/O'Connor  
MSFC/James  
MSFC/Rudolph  
MSFC/Belew

MSC/Gilruth  
MSC/Shea (6)  
MSC/Faget  
MSC/Kraft  
MSC/Piland (6)

UNCLASSIFIED